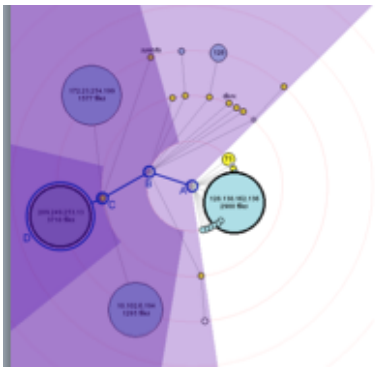
Course Syllabus

Jump to Today

i247: Information Visualization and Presentation



Course Objectives

The goal of information visualization is the unveiling of the underlying structure of large or abstract data sets using visual representations that utilize the powerful processing capabilities of the human visual perceptual system. Information visualization is an exciting topic, and the last two decades have witnessed the development of many interesting ideas about how to visualize information.

Information visualization and information graphics are tools for communicating, understanding, and analyzing. This course will take a critical stance towards the field of information visualization. Rather than survey existing approaches, we will analyze the factors contribute to success or lack thereof, as a means to determine how to devise future successful visualizations. Criteria for success in this analysis are either positive results from usability studies or wide adoption by the target user population. This course will also have a focus on how to present information clearly and effectively.

The intended objectives for students are to:

- Learn how to present information in an understandable, efficient, effective, and aesthetic manner, for the purposes of explaining ideas and analyzing data.
- Acquire skills at designing and evaluating information visualizations and other forms of visual presentation.
- Become familiar with the core principles and some of the literature of the field.

Course Format and Student Participation

We'll be using a new learning method that is a blend of what is sometimes called active learning and peer learning. The idea is that everyone prepares for every class by doing readings and exercises or quizzes before the class. Class sessions will alternate between short segments of lectures followed by activities by students. Everyone works in every class, not just the instructor!

Types of in-class exercises will include, but are not limited to: creating designs, peer assessing other students' designs, building on other students' or your own designs, practicing coding, and answering questions. Students are expected to attend every class unless they have extenuating circumstances.

Because the class is so active, everyone must take the class for a letter grade -- no auditors and no taking it S/U.

Required Books

Two books are required for this course:

- Few, Stephen: **Now You See It,** (http://www.amazon.com/Now-You-See-Visualization-Quantitative/dp/0970601980) Analytics Press, 2009
- Cairo, Alberto: **The Functional Art** (http://www.amazon.com/The-Functional-Art-introduction-visualization/dp/0321834739), New Riders, 2013

Other readings, both required and optional, will be assigned and linked to.

Software Tools

Together in this course we will learn several software tools, some in more depth than others. These will be:

- ~~pyplot~~ Highcharts
- Adobe Illustrator
- Tableau

- d3.js

All are available (or will be made available) to students in the course free of charge for the duration of the course.

To prepare for learning d3.js, it is recommended that you get up to speed on CSS, HTML and the DOM, and javascript ahead of time, if you are not already proficient in these. Below are some recommended tutorials:

- Tutorials for **HTML, CSS, and Javascript** **(http://www.htmldog.com/guides/)**
- Tutorial for **developing d3 in Chrome** **(http://blog.nextgenetics.net/?e=21)**
- Excellent **beginner tutorials for d3** **(http://alignedleft.com/tutorials/d3)**

Instructors and Office Hours

Professor Marti Hearst: Mondays 11am-noon, South Hall 307b

TAs Raymon Sutedja-The and Sonali Sharma: by appointment

TA lab: Wednesdays 11am-noon, South Hall 210

Assignments Summary:

Date	Details	
Wed Jan 22, 2014	Prepare for Class 1/22	due by 9:30am
Mon Jan 27, 2014	Prepare for Class 1/27	due by 8:30am
	Quiz: Test Your Understanding of Readings for 1/27	due by 8:30am
Wed Jan 29, 2014	Prepare for Class 1/29	due by 8:30am
Mon Feb 3, 2014	Prepare for Class 2/3	due by 8:30am
	Quiz: Test Your Understanding of Reading for 2/3 (INFO 247 LEC 001)	due by 8:30am
Wed Feb 5, 2014	Prepare for Class 2/5	due by 8:30am
Mon Feb 10, 2014	Prepare for class 2/10	due by 8:30am
Wed Feb 12, 2014	Objectively Assessed Visualization Design (Part 1: Individual Assignment Due Wednesday Feb 12)	due by 8:30am
	Prepare for class 2/12	due by 8:30am
Tue Feb 18, 2014	Objectively Assessed Visualization (Part 2, Paired Assignment, Due Tuesday Feb 18th)	due by 8:30am
Wed Feb 19, 2014	Prepare for Class 2/19	due by 8:30am
	Talk by Maneesh Agrawala: Storytelling Tools: 12:30 in room 205 (free lunch if you sign up)	12:30pm

Date	Details	
Mon Feb 24, 2014	Prepare for Class 2/24	due by 8:30am
	Prepare for Class 2/24	due by 8:30am
	Internet of Things Infoviz (and HCI) Final Project Pitch (pizza included)	4pm to 5:30pm
Wed Feb 26, 2014	Prepare for Class 2/26	due by 8:30am
Mon Mar 3, 2014	Create a Narrative Infographic	due by 8:30am
	Prepare for Class 3/3	due by 8:30am
Wed Mar 5, 2014	Prepare for Class 3/5	due by 8:30am
Wed Mar 12, 2014	Prepare for Class 3/12	due by 8:30am
Mon Mar 17, 2014	Exploratory Data Analysis with Tableau	due by 8:30am
	Prepare for Class 3/17	due by 8:30am
Wed Mar 19, 2014	Prepare for Class 3/19	due by 8:30am
Mon Mar 31, 2014	Prepare for Class 3/31	due by 8:30am
Wed Apr 2, 2014	Prepare for Class 4/2	due by 8:30am
Mon Apr 7, 2014	Interactive Visualization with d3	due by 8:30am
	Prepare for Class 4/7	due by 8:30am
Wed Apr 9, 2014	Final Project Proposal	due by 8:30am
	Prepare for class 4/9	due by 8:30am
Mon Apr 14, 2014	Prepare for Class 4/14	due by 8:30am
Mon Apr 28, 2014	Final Project Mid-Project Presentations	due by 9:30am
Wed Apr 30, 2014	Final Project Mid-Project Presentations (II)	due by 8:30am
Fri May 9, 2014	Final Project Showcase (2-4pm)	due by 2pm
Mon May 12, 2014	Final Project Writeup	due by 9:30am

Date	Details
	Prepare for Class 3/10
	Prepare for Class 4/16
	Prepare for Class 4/21
	Prepare for Class 4/21
	Prepare for Class 4/23
	Quiz: Review Concepts Using Questions from Other Students
	Quiz: Test Your Understanding of Reading for 2/3